Information for File #2005-000914-TWP

Applicant	**Minnesota Department of Transportation**
	District 1, Duluth
Corps Contact	Timothy W. Peterson
Address	1554 Highway 2
	Two Harbors, Minnesota 55616
E-Mail	timothy.w.peterson@mvp02.usace.army.mil
Phone	(218) 834-6630
Primary County	Lake
Section	21, 22, 28, 29, 31, and 32
Township	56N
Range	7W
Information Complete On	**March 28, 2005**
Posting Expires On	**April 27, 2005**
Authorization Type	LOP-D

PROJECT DESCRIPTION AND PURPOSE: The applicant is proposing to reconstruct TH 61 from 0.6 miles south of CSAH 5 in Silver Bay, Minnesota to 1.7 miles south of TH 1 to meet current design standards, address growing traffic volumes, and increase safety.

The reconstruction project would involve the grading and surfacing along a 4 mile stretch of new alignment to correct substandard horizontal and vertical alignments and provide better stopping sight distances. Some project segments include shifting the roadway inland up to approximately 95 feet. Other segments will be shifting the roadway lakeward up to approximately 113 feet, maximum. The project would require additional right-of-way. The highway would be constructed utilizing New Construction/Reconstruction Standards for a Principle Arterial having an ADT greater than 3,000.

The proposed urban roadway section would feature two 12 foot wide driving lanes and 4-foot-wide inside shoulders (measured to the face of the concrete median curb) and 11.5-foot-wide shoulders (10.0 foot paved, 1.5 foot gravel). Inslopes would be 1V:4H. Backslopes would vary from 1V:3H in normal cut areas to vertical in rock excavation areas. Ditches would be as shallow as possible to minimize impacts to the surrounding area, but of sufficient depth and gradients to provide adequate roadway drainage. Perforated pipe would be placed in the granular subgrade to provide drainage and would outlet to the slopes and into the roadway ditches,

The proposed rural roadway section would feature two 12-foot-wide driving lanes and 11.5-foot-wide shoulders (10.0 foot paved, 1.5 foot gravel). Inslopes would be constructed at 1V:4H. Backslopes would vary from 1V:3H in normal cut areas to vertical in rock excavation areas. Ditches would be as shallow as possible to minimize impacts to the surrounding area, but of sufficient depth and gradients to provide

adequate roadway drainage. Perforated pipe would be placed in the granular subgrade to provide drainage and would outlet to the slopes and into the roadway ditches.

Located 2.8 miles northeast of CSAH 5 (Outer Drive), Bridge 3887 over Palisade Creek would be replaced. The concrete arch would be replaced with a single-span bridge. Slopes have been reduced in this area to 1V:2H to lessen impacts to the creek area. Guardrails would be installed. Other culverts in the project area would be extended or replaced as required.

Traffic would be maintained along the corridor during construction by building the roadway in stages. The existing roadway would be used while segments on the new alignment are constructed. There is no viable detour for this project.

There would be an underpass constructed for the Gitchi-Gami Trail crossing under TH 61 approximately 0.4 miles northeast of CSAH 5. Pedestrians, bicyclists and inline skaters would use the underpass. In the winter the underpass would be available fro snowmobile traffic.

The box culvert for Williams Creek would be extended on the inlet end.

There would be one additional 49-inch-span CMP-A centerline culvert removed and replaced with a 51-inch-span RCP-A plus aprons. The culvert is located outside, and the south west of, the project limits at TH 61 Ref. Pt. 060+00.530.

NAME, AREA AND TYPES OF WATERS (INCLUDING WETLANDS) SUBJECT TO LOSS:

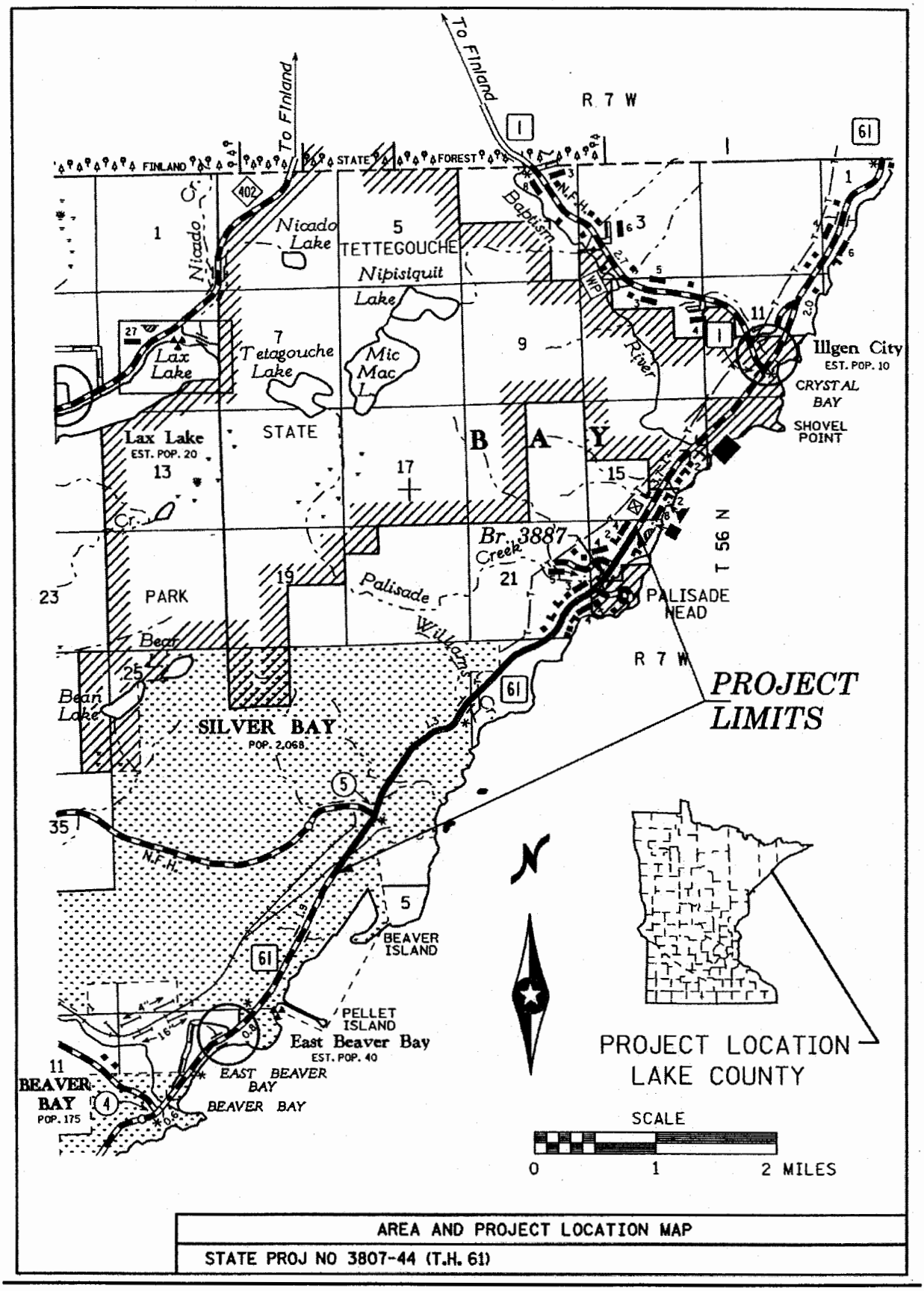
The project would result in the loss of 1.7 acres of shrub wetlands adjacent to Palisade Creek, Williams Creek, and unnamed tributaries to Lake Superior in 9 locations.

ALTERNATIVES CONSIDERED: The “No-Build” Alternative, would involve only short-term, minor restoration type activities. These maintenance level activities, while prolonging the useful life of the highway, do not adequately address geometric deficiencies of the highway and related safety issues, or the problems associated with ongoing deterioration of the Palisade Creek Bridge. The further deterioration and decline in condition of the highway and bridge would result in increased disruption to highway users due to maintenance activities. The “No-Build” Alternative is not a viable option because it does not correct the roadway and bridge deficiencies or address bicycle and pedestrian concerns. The “No-Build” Alternative would not accomplish the objective to provide a safe, modern, and convenient roadway for the motoring public and does not result in replacement of a deficient bridge.

The only other alternative considered was the Proposed Alternative.

COMPENSATORY MITIGATION: As compensation for the 1.7 acres of wetlands which would be lost due to the project, the applicant is proposing to purchase credits from the Minnesota Board of Water and Soil Resources (BWSR) State Wetland Bank.

Drawings See attached, below.

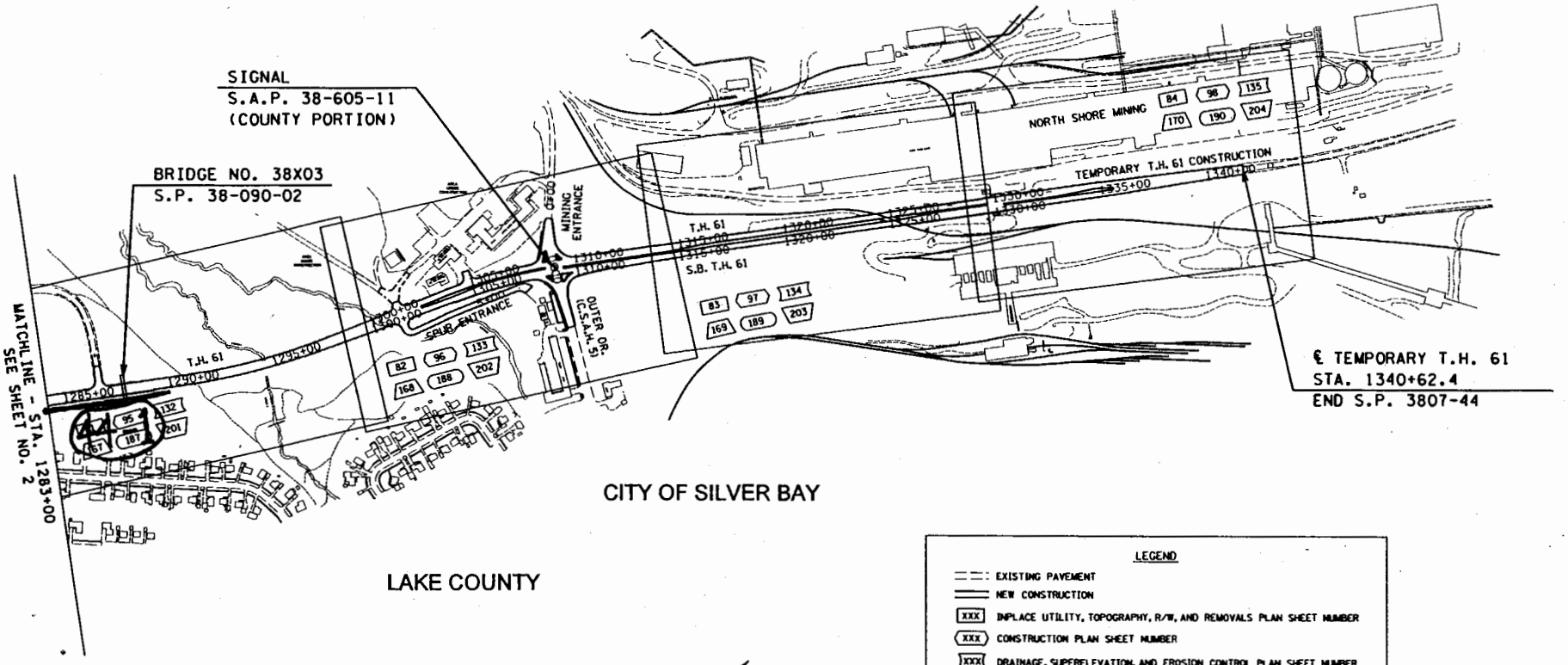


AREA AND PROJECT LOCATION MAP

STATE PROJ NO 3807-44 (T.H. 61)

05-914-TWP

Dwg 1



LEGEND

- EXISTING PAVEMENT
- NEW CONSTRUCTION
- XXX INPLACE UTILITY, TOPOGRAPHY, R/W, AND REMOVALS PLAN SHEET NUMBER
- XXX CONSTRUCTION PLAN SHEET NUMBER
- XXX DRAINAGE, SUPERELEVATION, AND EROSION CONTROL PLAN SHEET NUMBER
- XXX STRIPING PLAN SHEET NUMBER
- XXX EXISTING SIGNING PLAN SHEET NUMBER
- XXX PROPOSED SIGNING PLAN SHEET NUMBER
- EXISTING RAILROAD

DESIGN TEAM
DRAWN BY: PRM
DESIGNER: JCK
CHECKED BY: SSW

NO.	BY	DATE	REVISIONS

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: Licensed Professional Engineer Date: 2/1/2005
Printed Name: SCOTT S. WEYANDT Lic. No. 25602

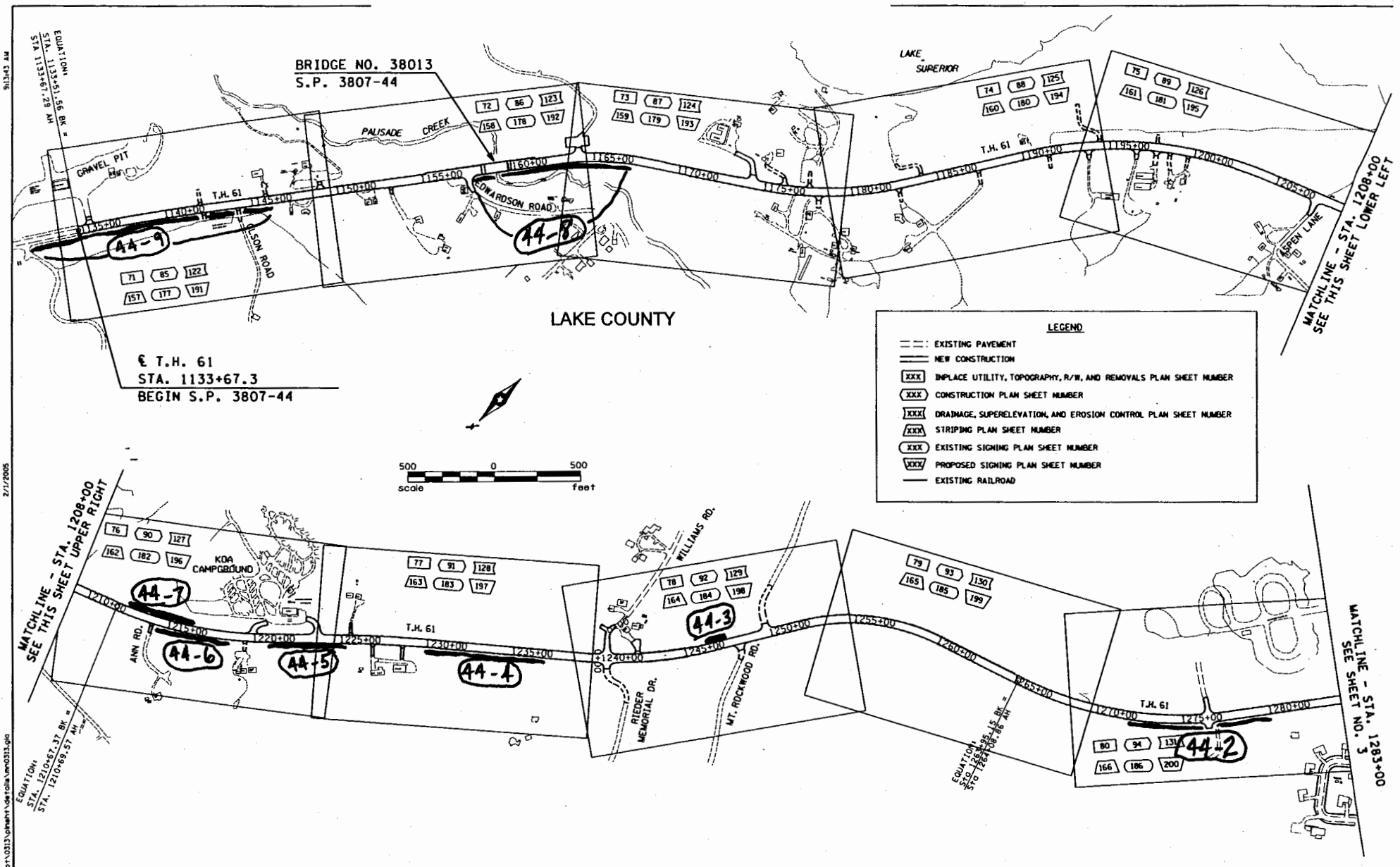
SEH
PHONE: 218.722.0547
331 EAST 2ND STREET
DULUTH, MN 55805

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE PROJECT NO. 3807-44
STATE PROJECT NO. 38-090-02
(T.H. 61)

GENERAL LAYOUT
STA. 1283+00 TO STA. 1340+62.4

FILE NO. MNDOT0313
GL2 OF GL2
3 / 224

05-914-TMP
Dwg 2



DESIGN TEAM	NO.	BY	DATE	REVISIONS
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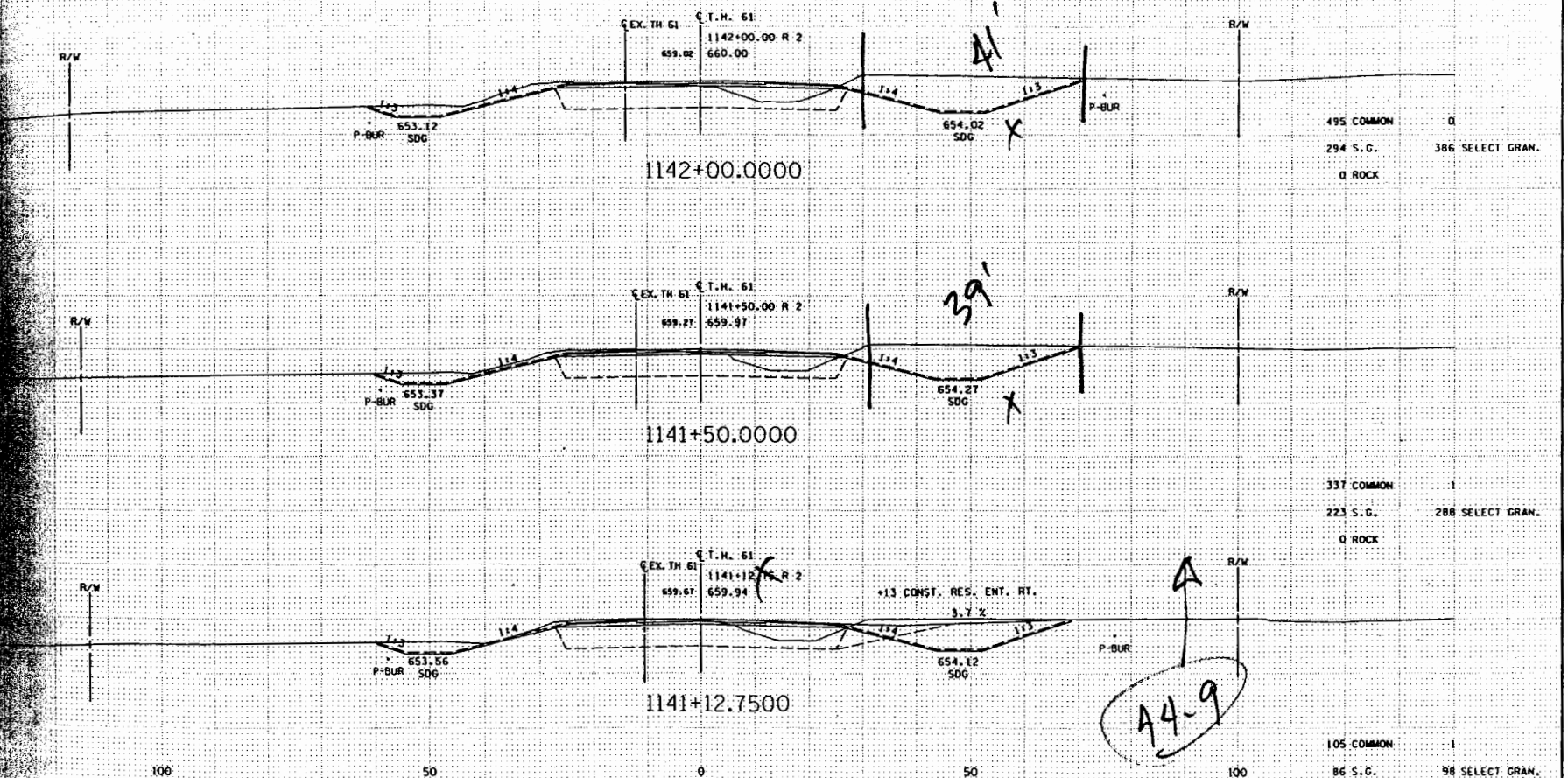
MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE PROJECT NO. 3807-44
STATE PROJECT NO. 38-090-02
(T.H. 61)

GENERAL LAYOUT
STA. 1133+67.3 TO STA. 1283+00

FILE NO. MNDOT0313
GL1 OF GL2
2/224

05-914-TWP
Dwg-3

Fed. Proj. No.



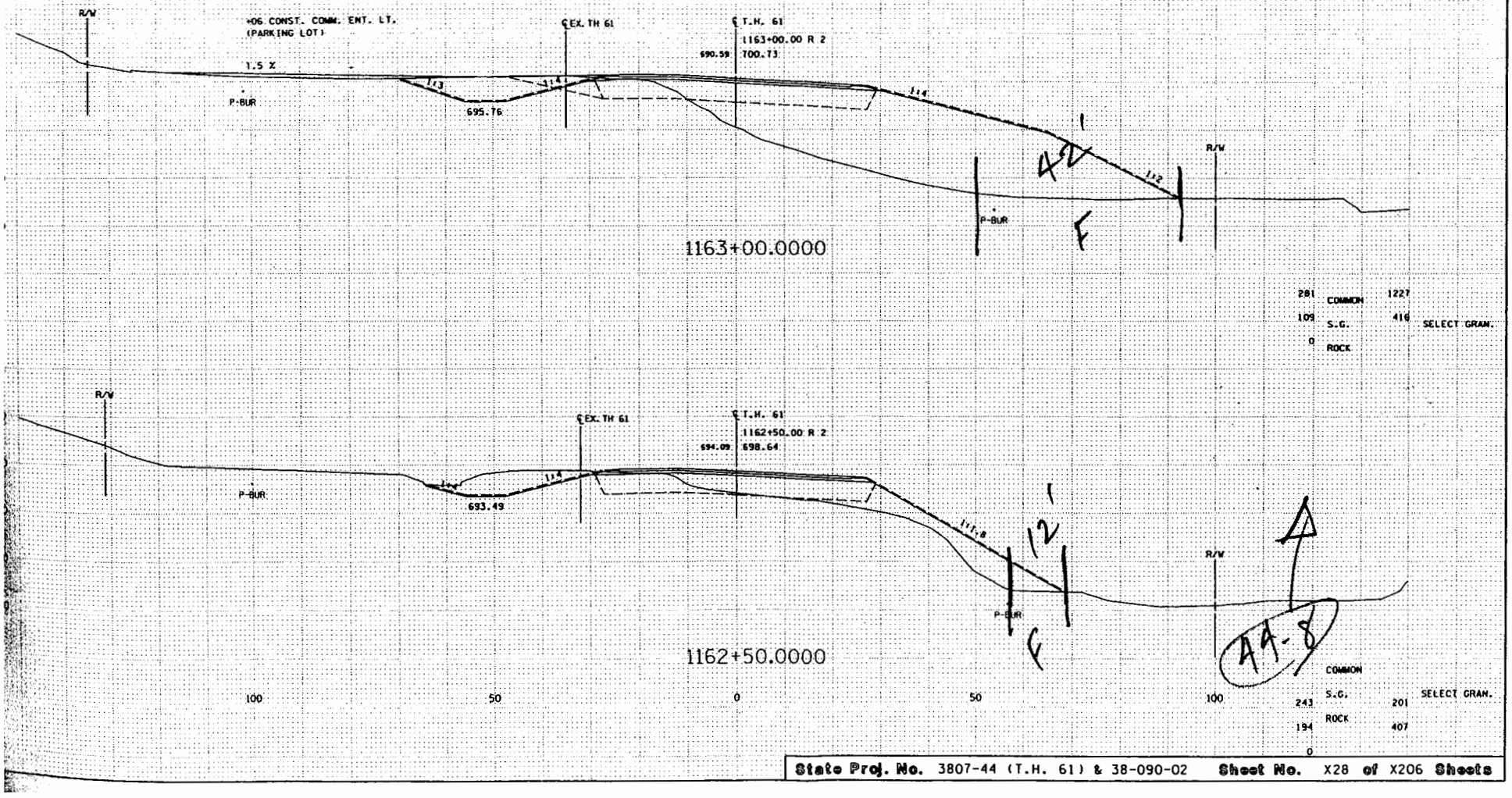
State Proj. No. 3807-44 (T.H. 61) & 38-090-02 Sheet No. X7 of X206 Sheets

05-914-TWP

Dwg

Fed. Proj. No.

EXCAVATION CU.YD.	EMBANKMENT CU. YD.



State Proj. No. 3807-44 (T.H. 61) & 38-090-02 **Sheet No.** X28 **of** X206 **Sheets**

05-914-TWP

Dwg 5

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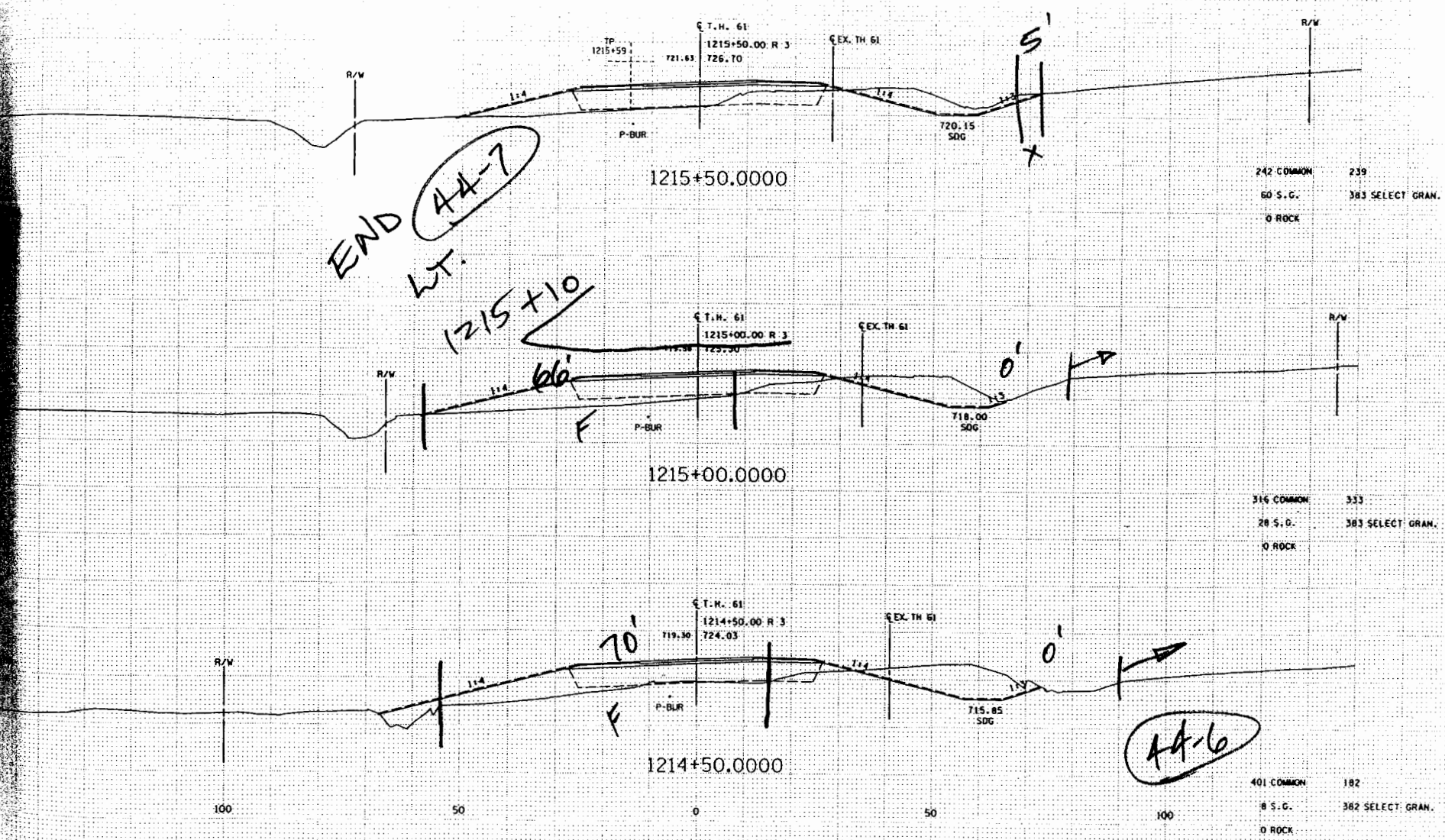

State Proj. No. 3807-44 (T.H. 61) & 38-090-02 Sheet No. X79 of X206 Sheets

05-917-TWP
Dwg 6

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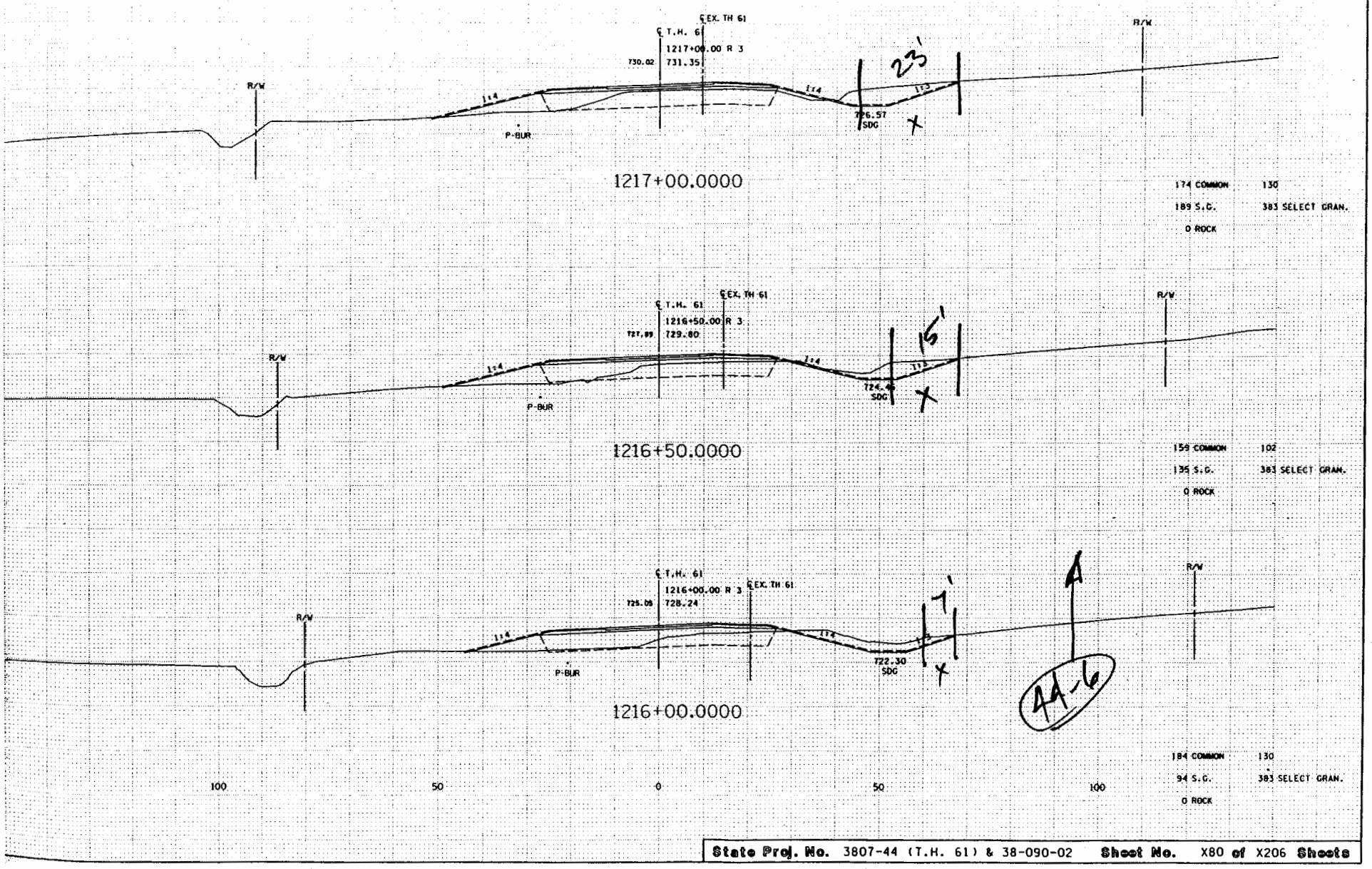


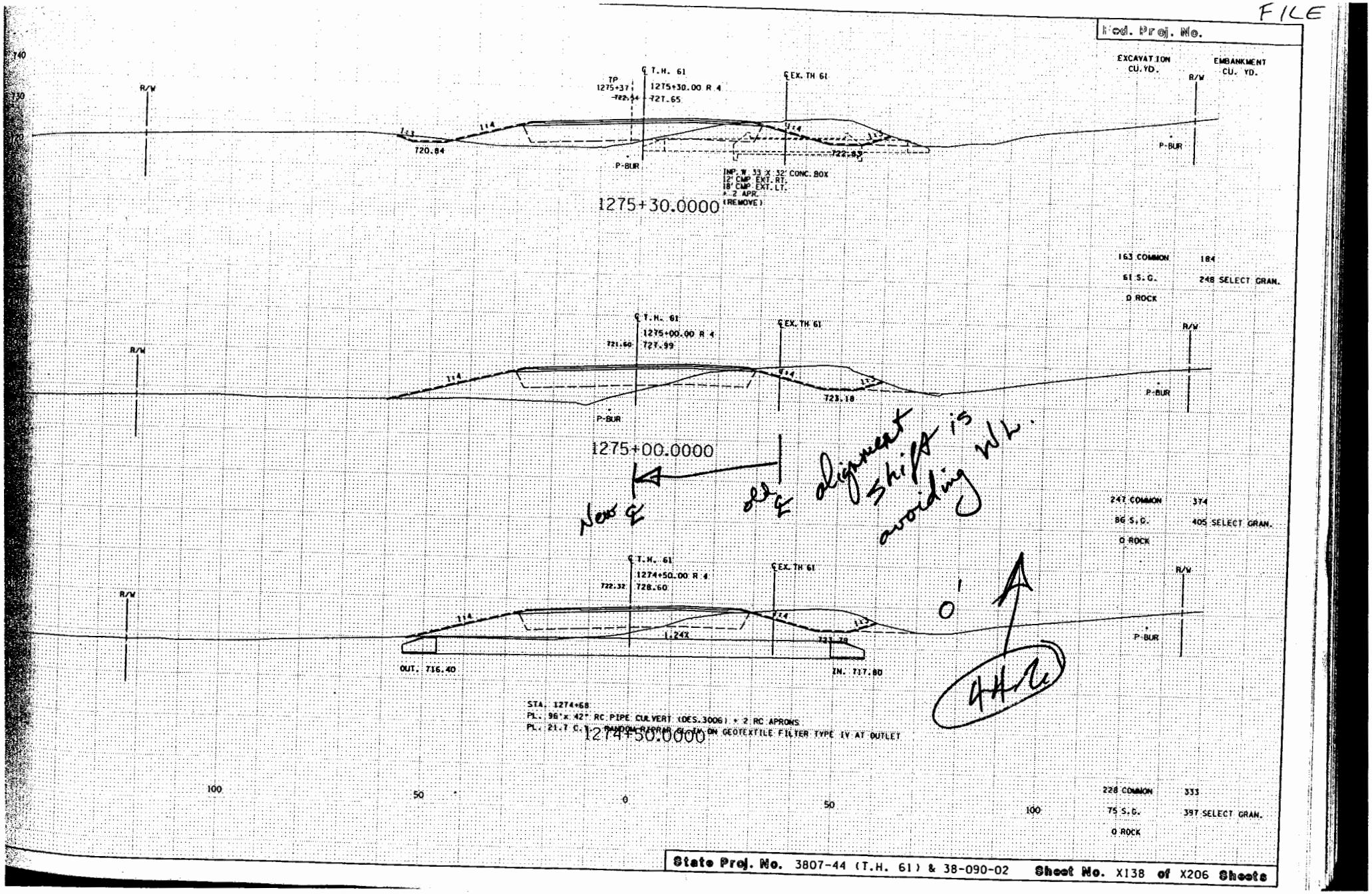
State Proj. No. 3807-44 (T.H. 61) & 38-090-02 Sheet No. X80 of X206 Sheets

05-914-TWP

Dwg 7

FILE

Hwd. Proj. No.

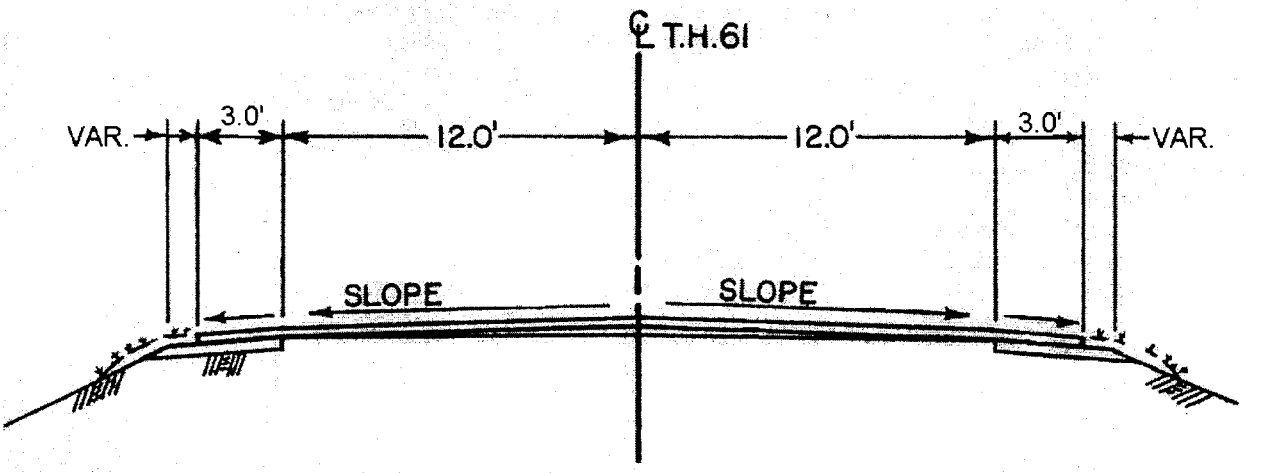


State Proj. No. 3807-44 (T.H. 61) & 38-090-02 Sheet No. X138 of X206 Sheets

05-914-TWP

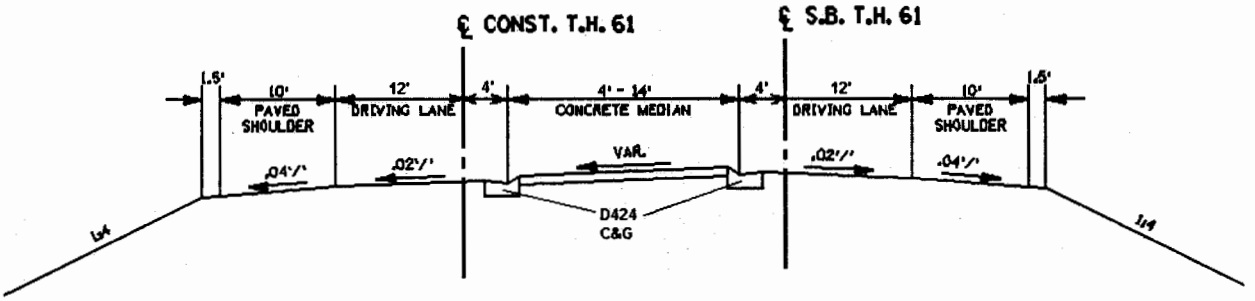
Dwg-8

Existing Typical Section

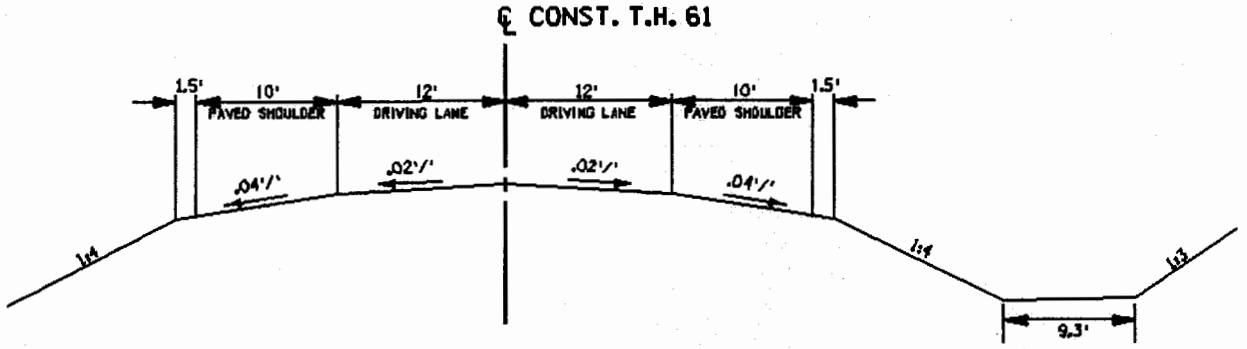


05-914-TWP
Doc-9

Proposed Typical Sections



TYPICAL SECTION - URBAN

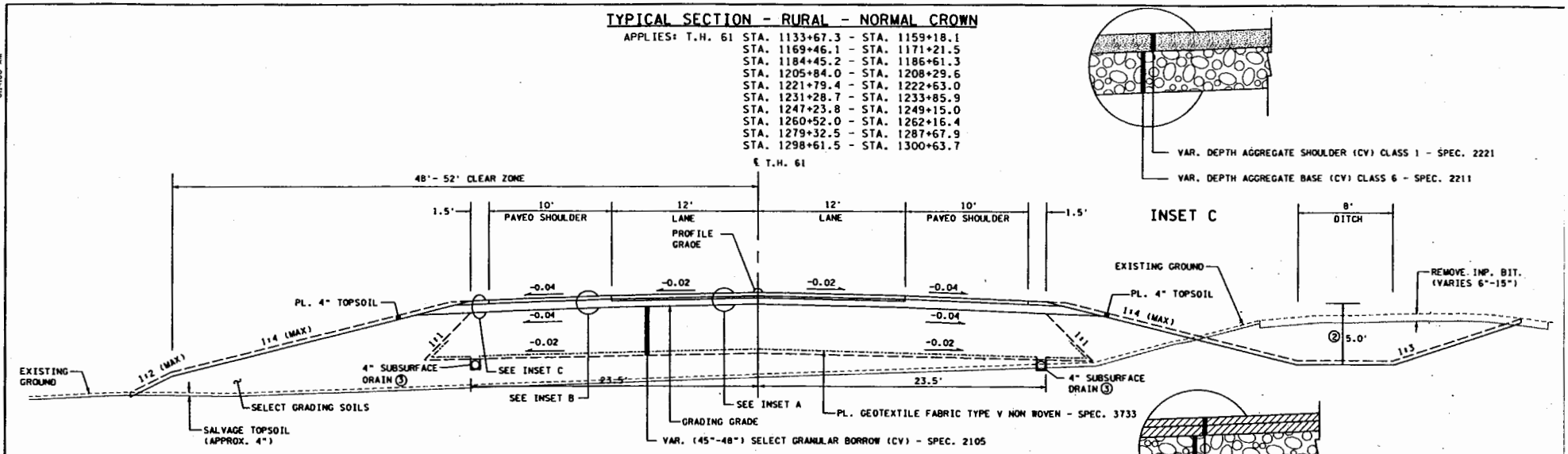


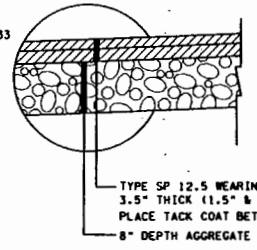
TYPICAL SECTION - RURAL

C5-914-TWP
Dwg-10

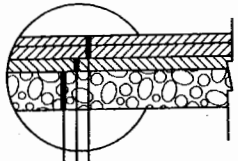
TYPICAL SECTION - RURAL - NORMAL CROWN

APPLIES: T.H. 61 STA. 1133+67.3 - STA. 1159+18.1
STA. 1169+46.1 - STA. 1171+21.5
STA. 1184+45.2 - STA. 1186+61.3
STA. 1205+84.0 - STA. 1208+29.6
STA. 1221+79.4 - STA. 1222+63.0
STA. 1231+28.7 - STA. 1233+85.9
STA. 1247+23.8 - STA. 1249+15.0
STA. 1260+52.0 - STA. 1262+16.4
STA. 1279+32.5 - STA. 1287+67.9
STA. 1298+61.5 - STA. 1300+63.7





INSET B

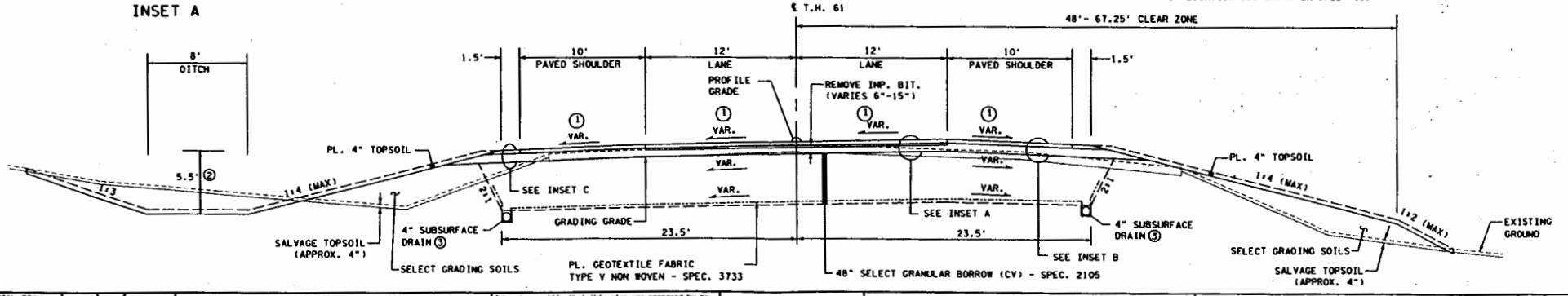


INSET A

TYPICAL SECTION - RURAL - IN SUPERELEVATION

APPLIES: T.H. 61 STA. 1159+18.1 - STA. 1169+46.1
STA. 1171+21.5 - STA. 1184+45.2
STA. 1186+61.3 - STA. 1205+84.0
STA. 1208+29.6 - STA. 1222+79.4
STA. 1222+63.0 - STA. 1231+28.7
STA. 1235+98.1 - STA. 1247+23.8
STA. 1249+15.0 - STA. 1260+52.0
STA. 1262+16.4 - STA. 1278+61.2
STA. 1287+67.9 - STA. 1298+61.5
STA. 1300+63.7 - STA. 1301+29.9

NOTES:
① VARIABLE CROSS SLOPE, SEE SUPERELEVATION SHEETS 122-135.
② ALL DITCH DEPTHS ON RIGHT SIDE OF ROADWAY (INLAND) ARE 5.0' DEEP AND ON LEFT SIDE OF ROADWAY (LAKESIDE) ARE 5.5' DEEP.
③ FOR SUBSURFACE DRAIN CONSTRUCTION DETAILS SEE SHEET 43. FOR LOCATION SEE CHART ON SHEET 15.



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: PRM				
DESIGNER: JCK				
CHECKED BY: SSW				

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Printed Name: SCOTT S. WEYANDT Lic. No. 25602

SEH
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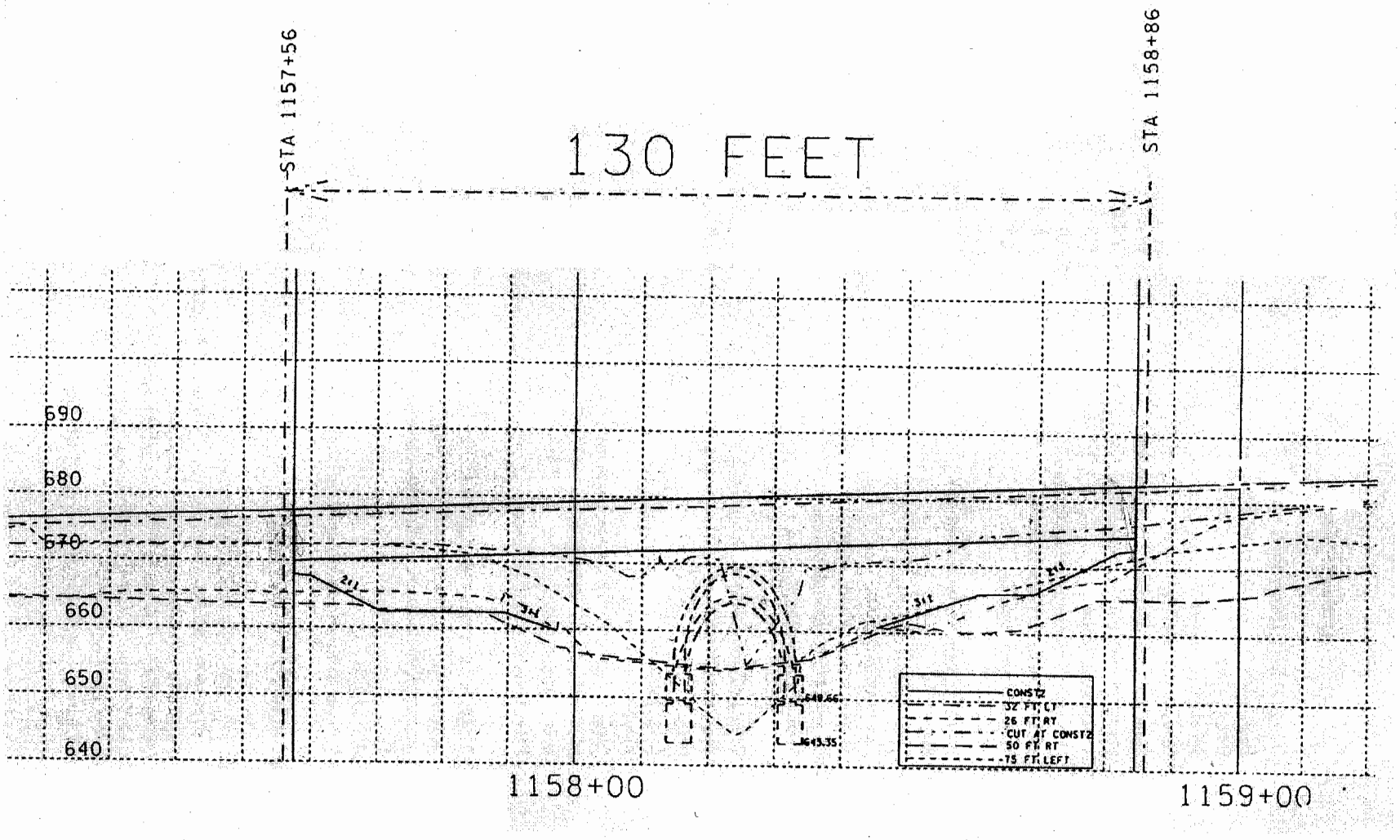
851 EAST 2ND STREET
DULUTH, MN 55805

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE PROJECT NO. 3807-44
STATE PROJECT NO. 38-090-02
(T.H. 61)

TYPICAL SECTION
T.H. 61

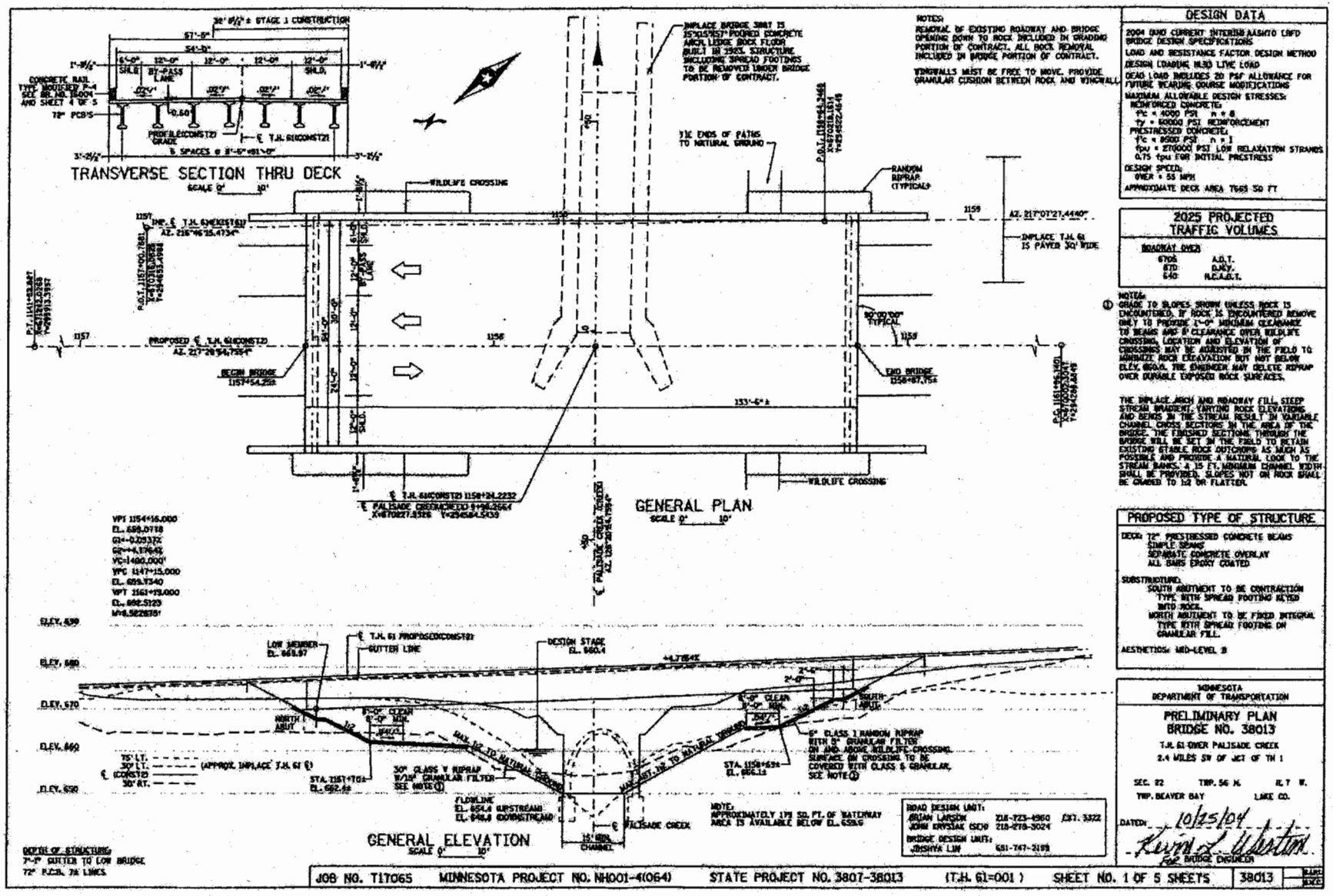
FILE NO. MNDOT0313
TS1 OF TS8
32 / 224

05-914-TWP
Dwg-11

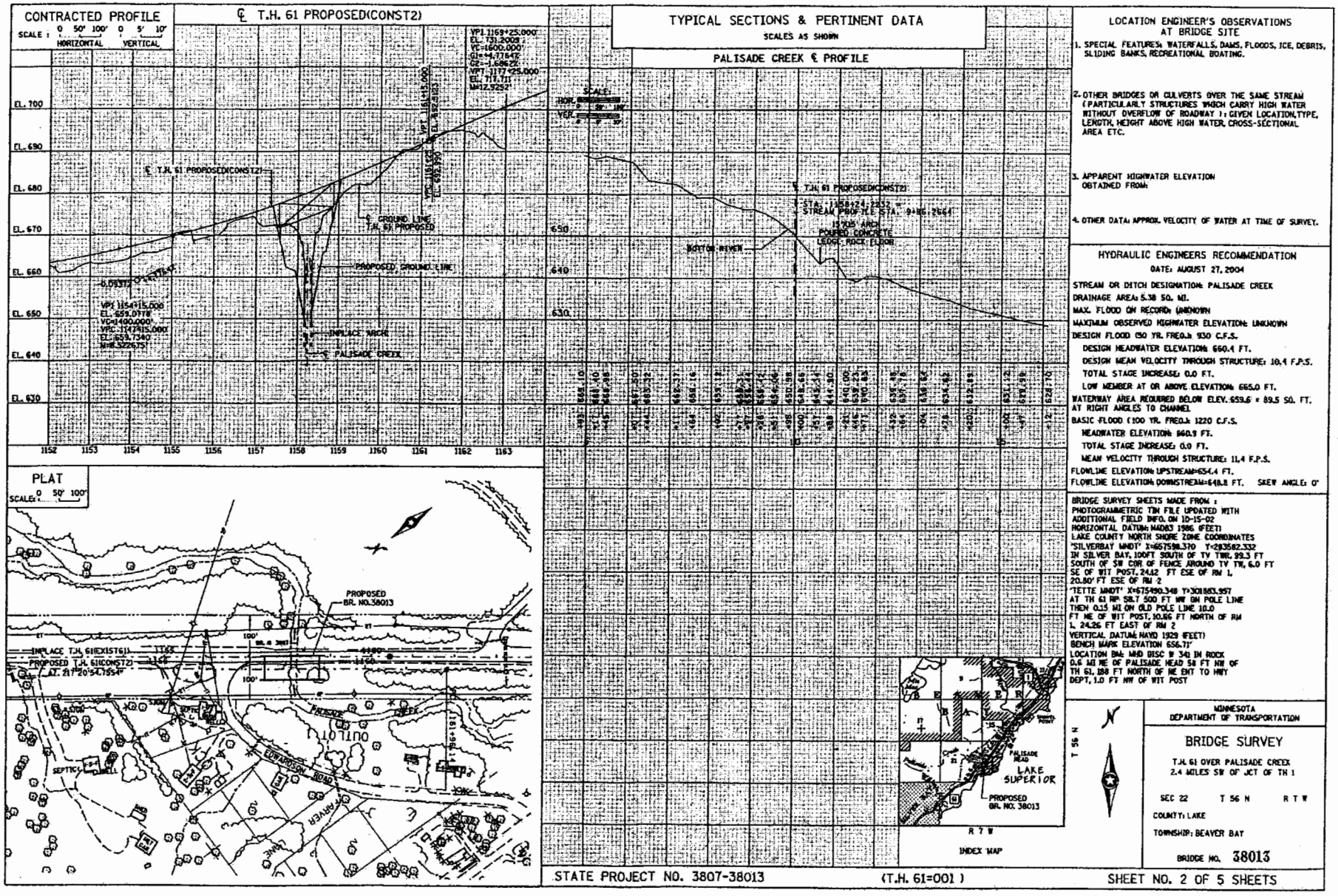


05-914-TWP
Dwg 12

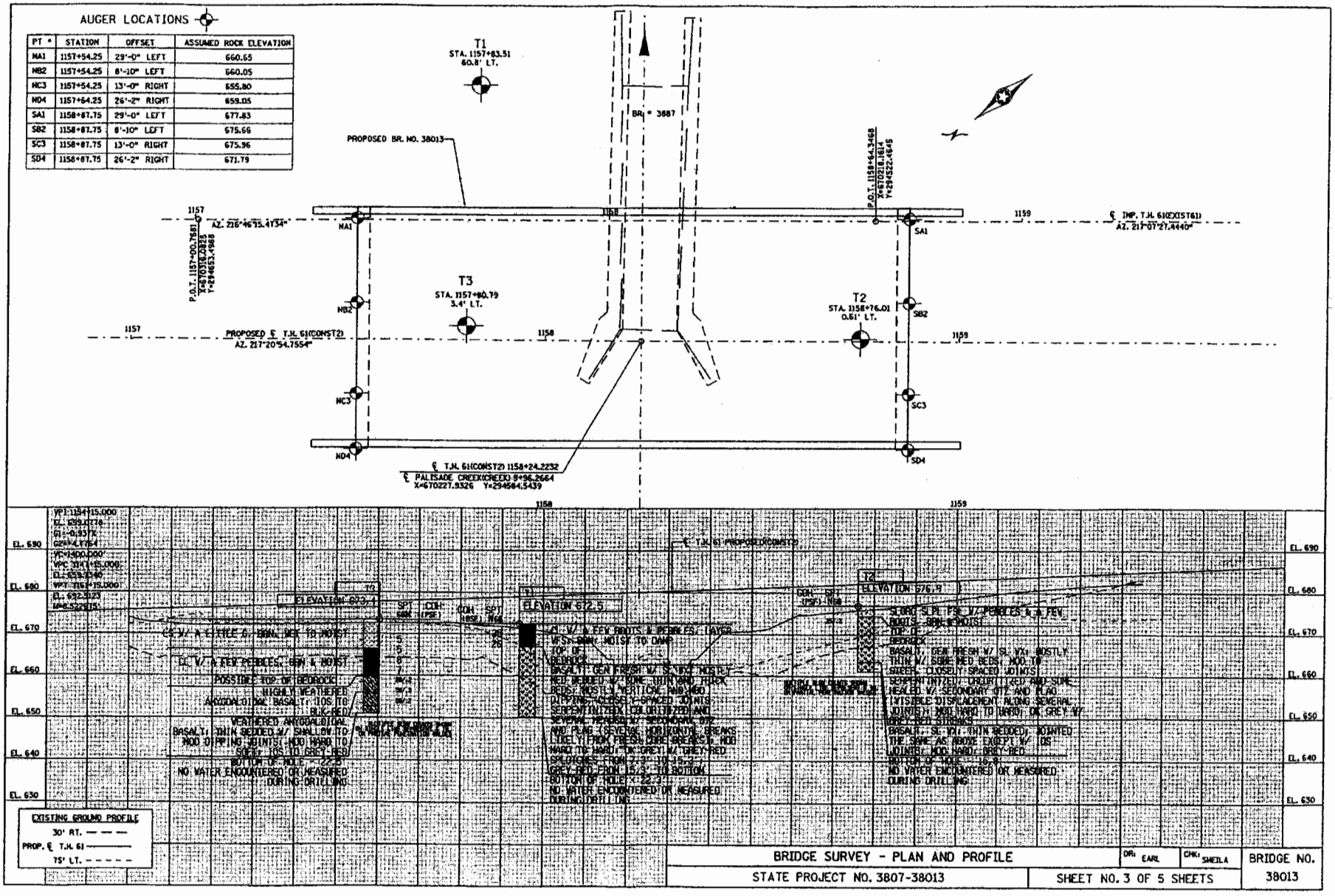
Preliminary Bridge Plan



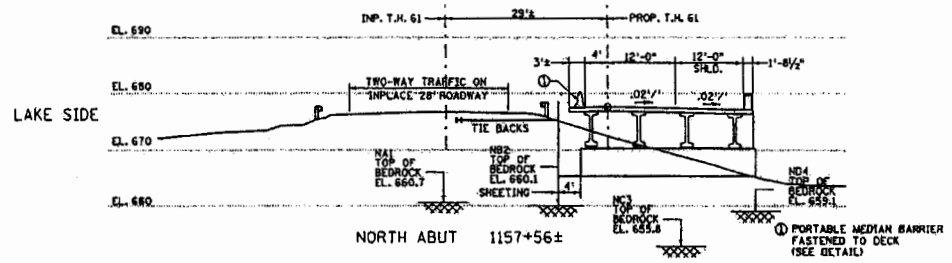
05-914-TWP


CONTRACTED PROFILE
℄ T.H. 61 PROPOSED(CONST2)
TYPICAL SECTIONS & PERTINENT DATA
SCALES AS SHOWN
PALISADE CREEK ℄ PROFILE
LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE
1. SPECIAL FEATURES: WATERFALLS, DAMS, FLOODS, ICE, DEBRIS, SLIDING BANKS, RECREATIONAL BOATING.
2. OTHER BRIDGES OR CULVERTS OVER THE SAME STREAM (PARTICULARLY STRUCTURES WHICH CARRY HIGH WATER WITHOUT OVERFLOW OF ROADWAY): GIVEN LOCATION, TYPE, LENGTH, HEIGHT ABOVE HIGH WATER, CROSS-SECTIONAL AREA ETC.
3. APPARENT HIGHWATER ELEVATION OBTAINED FROM:
4. OTHER DATA: APPROX. VELOCITY OF WATER AT TIME OF SURVEY.
HYDRAULIC ENGINEERS RECOMMENDATION
DATE: AUGUST 27, 2004
STREAM OR DITCH DESIGNATION: PALISADE CREEK
DRAINAGE AREA: 5.38 SQ. MI.
MAX. FLOOD ON RECORD: (UNKNOWN
MAXIMUM OBSERVED HIGHWATER ELEVATION: UNKNOWN
DESIGN FLOOD (50 YR. FREQ.): 930 C.F.S.
DESIGN HEADWATER ELEVATION: 660.4 FT.
DESIGN MEAN VELOCITY THROUGH STRUCTURE: 10.4 F.P.S.
TOTAL STAGE INCREASE: 0.0 FT.
LOW MEMBER AT OR ABOVE ELEVATION: 665.0 FT.
WATERWAY AREA REQUIRED BELOW ELEV. 659.6 = 89.5 SQ. FT. AT RIGHT ANGLES TO CHANNEL
BASIC FLOOD (100 YR. FREQ.): 1220 C.F.S.
HEADWATER ELEVATION: 660.9 FT.
TOTAL STAGE INCREASE: 0.0 FT.
MEAN VELOCITY THROUGH STRUCTURE: 11.4 F.P.S.
FLOWLINE ELEVATION UPSTREAM=654.4 FT.
FLOWLINE ELEVATION DOWNSTREAM=648.8 FT. SKEW ANGLE: 0°
BRIDGE SURVEY SHEETS MADE FROM :
PHOTOGRAMMETRIC TIN FILE UPDATED WITH ADDITIONAL FIELD INFO. ON 10-15-02
HORIZONTAL DATUM: NAD83 1986 (FEET)
LAKE COUNTY NORTH SHORE ZONE COORDINATES
'SILVERBAY WNDT' X=667598.370 Y=2835821.332
IN SILVER BAY, 100FT SOUTH OF TY TWR, 99.3 FT SOUTH OF SW COR OF FENCE AROUND TY TW, 6.0 FT SE OF WIT POST, 24.42 FT ESE OF RM 1, 20.80 FT ESE OF RM 2
'TETTE WNDT' X=675490.348 Y=3018813.957
AT TH 61 RP 58.7 500 FT NW OH POLE LINE THEN 0.15 MI ON OLD POLE LINE 10.0 FT NE OF WIT POST, 30.86 FT NORTH OF RM 1, 24.26 FT EAST OF RM 2
VERTICAL DATUM: NAVD 1929 (FEET)
BENCH MARK ELEVATION 656.71'
LOCATION DAL: MND DISC IN 3 IN ROCK 0.6 MI NE OF PALISADE HEAD 58 FT NW OF TH 61, 188 FT NORTH OF NE ENT TO HWY DEPT, 1.0 FT NW OF WIT POST
PLAT
INDEX MAP
MINNESOTA DEPARTMENT OF TRANSPORTATION
BRIDGE SURVEY
T.H. 61 OVER PALISADE CREEK
2.4 MILES SW OF JCT OF TH 1
SEC 22 T 56 N R 7 W
COUNTY: LAKE
TOWNSHIP: BEAVER BAY
BRIDGE NO. 38013
STATE PROJECT NO. 3807-38013
(T.H. 61=001)
SHEET NO. 2 OF 5 SHEETS

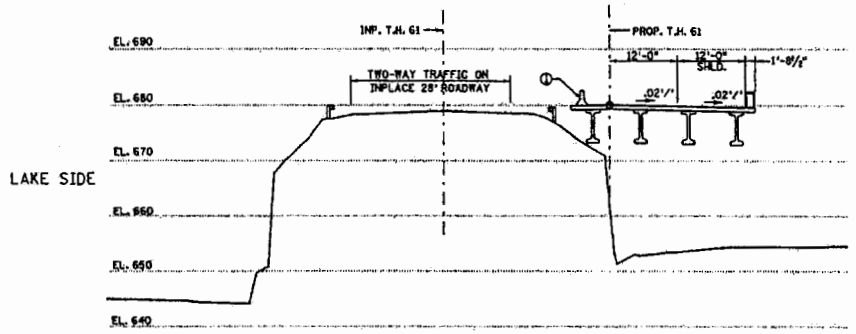
05-914-TWP


AUGER LOCATIONS
PT # | STATION | OFFSET | ASSUMED ROCK ELEVATION
NA1 | 1157+54.25 | 29'-0" LEFT | 660.65
NB2 | 1157+54.25 | 8'-10" LEFT | 660.05
NC3 | 1157+54.25 | 13'-0" RIGHT | 655.80
ND4 | 1157+54.25 | 26'-2" RIGHT | 659.05
SA1 | 1158+87.75 | 29'-0" LEFT | 677.83
SB2 | 1158+87.75 | 8'-10" LEFT | 675.66
SC3 | 1158+87.75 | 13'-0" RIGHT | 675.96
SD4 | 1158+87.75 | 26'-2" RIGHT | 671.79
T1
STA. 1157+83.51
60.8' LT.
T2
STA. 1158+76.01
0.61' LT.
T3
STA. 1157+80.79
3.4' LT.
BR. = 3887
PROPOSED BR. NO. 38013
PROPOSED ℄ T.H. 61(CONST2)
AZ. 217°20'54.7554"
℄ PALISADE CREEK(CREEK) 9+96.2664
X=670227.9326 Y=294564.5439
EXISTING GROUND PROFILE
30' RT.
PROP. ℄ T.H. 61
75' LT.
BRIDGE SURVEY - PLAN AND PROFILE
STATE PROJECT NO. 3807-38013
SHEET NO. 3 OF 5 SHEETS
BRIDGE NO. 38013

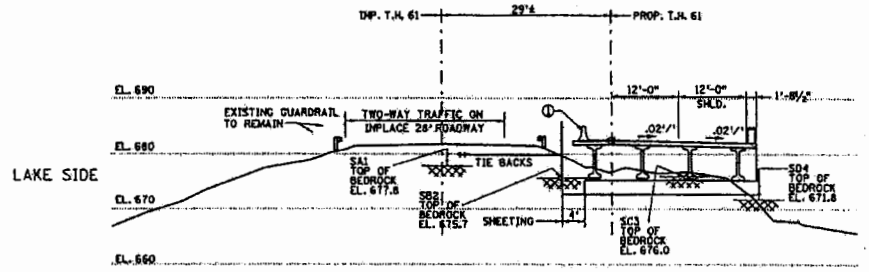
05-914-TWP



NORTH ABUT 1157+56±



℄ OF BARREL 1158+24±



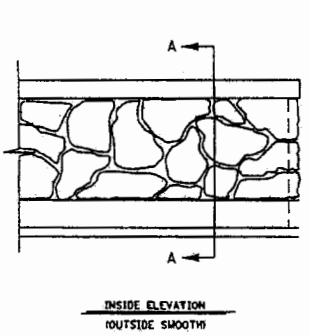
SOUTH ABUT 1158+86±

NOTES:

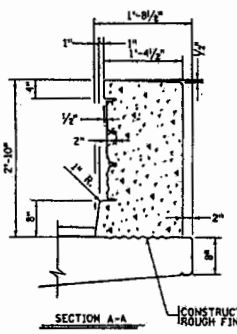
THE BACK OR ROCK ANCHOR CONFIGURATION SHOWN IS SCHEMATIC.

TRAFFIC TO BE REDUCED TO ONE LANE DURING SETTING OF BEAMS AND CONSTRUCTION OF OVERLAY.

FINAL STAGING DETAILS WILL BE COORDINATED DURING FINAL DESIGN OF THE BRIDGE.



INSIDE ELEVATION
(OUTSIDE SMOOTH)

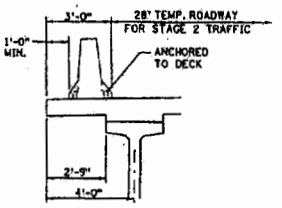


SECTION A-A

CONSTRUCTION JOINT ROUGH FINISH

MODIFIED P-4 BARRIER

NOTE:
ANTI-GRAFFITI COATING ON INSIDE AND TOP FACE.

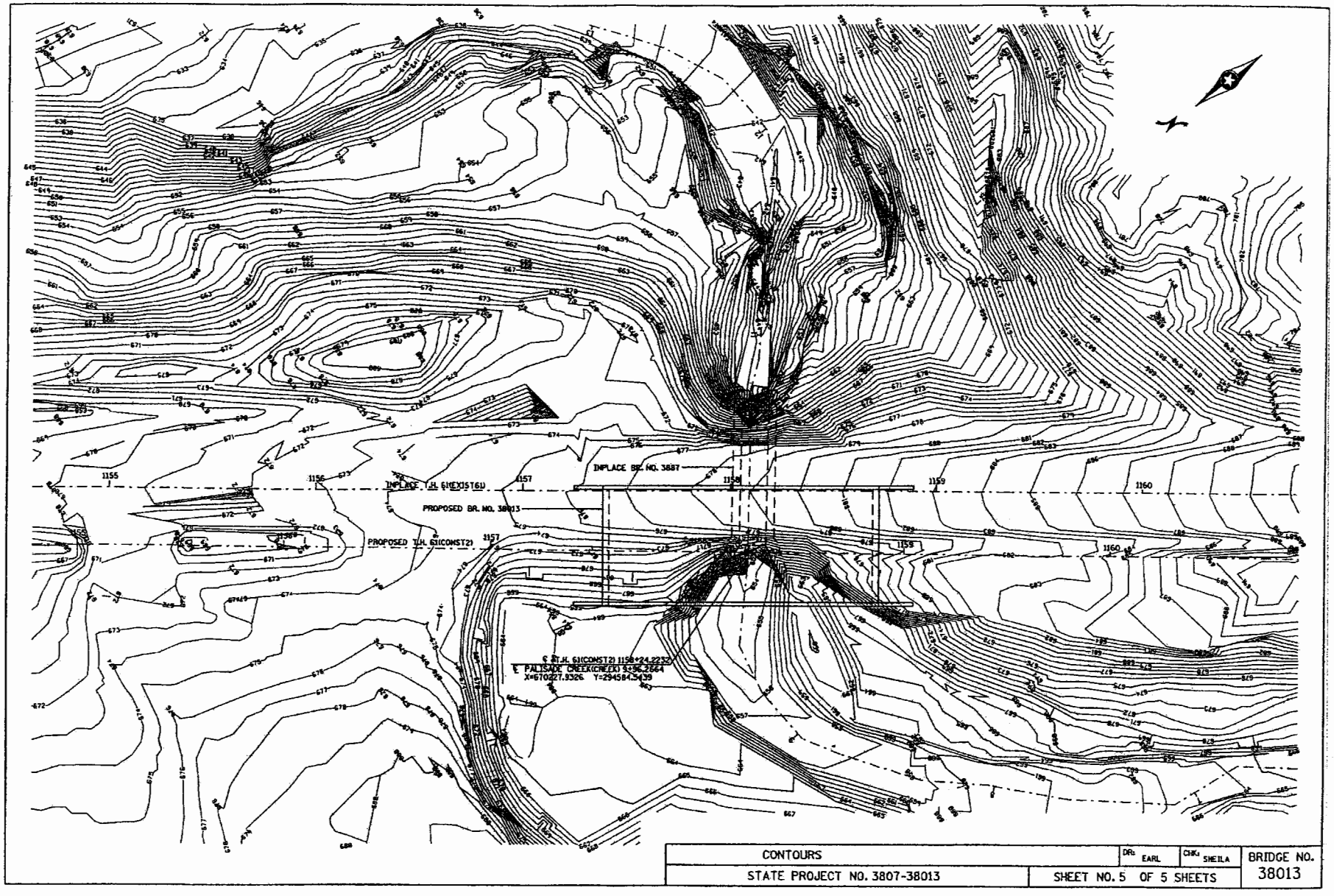


① TEMPORARY PORTABLE CONCRETE BARRIER 8337B

STAGE 1 CONSTRUCTION AND RAILING DETAIL			
STATE PROJECT NO. 3807-38013		DR. EARL	
SHEET NO. 4 OF 5 SHEETS		CHK. SHEILA	
BRIDGE NO. 38013			

File: 380744finalpl

05-914-Twp
Dwg-16



05-914-TWP

Dwg 17